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Diabetes Mellitus Patients' Knowledge About Hypoglycemia and Initial Management of Hypoglycemia

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ABSTRACT

Acute complications Diabetes Mellitus such as hypoglycemia is an emergency situation that can occur in the course of Diabetes mellitus disease. Hypoglycemia is a result of lower blood sugar levels below normal. The purpose of this research is to know the description of Diabetes Mellitus patient's knowledge about Hypoglycemia and the initial treatment of Hypoglycemia. The research design used descriptive research design and purposive sampling technique with a sample size of 30 people. Data collection using questionnaire sheet. The results showed that Diabetes Mellitus patients on the initial handling of Hypoglycemia found that 46.7% were in the category of knowledge enough and 16.7% less. Counseling by Polyclinic officers in Diabetes Mellitus patients about early handling Hypoglycemia needs to be done to treat Hypoglycemia.

Keywords: Knowledge; diabetes mellitus; hypoglycemia

Background

Hypoglycemia is one of the acute complications experienced by diabetes mellitus sufferers (1). Hypoglycemia is also known as a decrease in blood sugar levels, which is a condition where blood sugar levels are below normal, which can occur due to an imbalance between the food eaten, physical activity and the drugs used (2). Hypoglycemia syndrome is characterized by clinical symptoms including the patient feeling dizzy, weak, shaking, vision becomes blurry and dark, cold sweats, increased heart rate and sometimes loss of consciousness (hypoglycemia shock) (3).

Based on the results of the researcher's preliminary study on January 30 2018, the medical records of the Internal Medicine Polyclinic of Mardi Waluyo Hospital, Blitar City during 2017 recorded 2741 visits from Diabetes Mellitus patients, in 2018 there were 1281 patients during January, and 411 patients experienced hypoglycemia. during 2017.

The results of researchers' interviews with 10 DM patients who visited the Internal Medicine Polyclinic at Mardi Waluyo Regional Hospital, Blitar City, showed that patient data showed that 7 out of 10 patients had experienced hypoglycemia, 1 out of 10 patients did not know the meaning of hypoglycemia and how to treat it. The most common causes of hypoglycemia include patients forgetting to eat, eating too little, excessive insulin doses, and fatigue.

Based on the case notes above, researchers found the problem that management of diabetes mellitus as a trigger for complications such as hypoglycemia in the community is still lacking and requires further prevention and treatment to reduce the number of hypoglycemia incidents.

From the descriptions above, researchers are interested in researching "Illustration of Knowledge of Diabetes Mellitus Patients About Hypoglycemia and Initial Treatment of

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Hypoglycemia in the Internal Medicine Polyclinic at Mardi Waluyo Regional Hospital, Blitar City"

Methods

This research used a descriptive method. The research sample was diabetes mellitus patients who came to the Internal Medicine Polyclinic at Mardi Waluyo Regional Hospital, Blitar City with a total of 30 respondents. The sampling technique was purposive sampling technique. The data collection tool was a questionnaire consisting of questions about describing diabetes mellitus patients' knowledge about hypoglycemia and initial treatment of hypoglycemia which contains statements that have been tested based on aspects of validity and reliability.

Results

Characteristics of Respondents

Table 1. Characteristics of Respondents

Variable		Frequency	Percent
Age (year)	40-49	3	10
	50-59	9	30
	> 60	18	60
Gender	Male	8	26.7
	Female	22	73.3
Education	Elementary School	10	33.3
	Junior High School	2	6.7
	Senior High School	12	40.0
	University	6	20.0
Work	Doesn't Work	14	46.7
	Retired	8	26.7
	self-employed	5	16.7
	Government employees	3	10.0
Period of time suffer from DM (year)	1	2	6.7
	2	1	3.3
	4	5	16.7
	>4	22	73.3
Type of treatment	Drug	11	36.7
	Insulin	15	50.0
	Drug and Insulin	4	13.3
Information about Hypoglycemia	Ever	20	66.7
	Never	10	33.3

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Have experienced hypoglycemia	1 time	4	13.3
	2 times	1	3.3
	3 times	3	10.0
	>3 times	14	46.7
	Never	8	26.7

Distribution of Diabetes Mellitus Patients' Knowledge about the concept of Hypoglycemia.

Table 2 Distribution of Diabetes Mellitus Patients' Knowledge about the concept of Hypoglycemia.

Variable		Frequency	Percent
Knowledge	Good	26	86.7
	Enough	3	10.0
	Not enough	1	3.3

The majority of Diabetes Mellitus patients' knowledge of the concept of hypoglycemia, namely 86.7%, is good.

Distribution of Diabetes Mellitus Patients' Knowledge about Initial Treatment of Hypoglycemia.

Table 3 Distribution of Diabetes Mellitus Patients' Knowledge about Initial Treatment of Hypoglycemia.

Variable		Frequency	Percent
Knowledge	Good	11	36.7
	Enough	14	46.7
	Not enough	5	16.7

The majority of Diabetes Mellitus patients' knowledge about initial management of hypoglycemia, namely 46.7% (14 patients) was sufficient, and 16.7% (5 patients) was insufficient.

Discussion

Based on the results of research using a questionnaire, it was found that the knowledge of Diabetes Mellitus patients at the Internal Medicine Polyclinic at Mardi Waluyo Hospital, Blitar City regarding the concept of Hypoglycemia was mostly in the good category, namely 86.7% (26 patients), sufficient knowledge was 10% (3 patients), and lack of knowledge was only 3.3% (1 patient).

According to researchers, these results prove that the level of knowledge of Diabetes Mellitus patients about Hypoglycemia is mostly good. This can be caused by several factors

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that influence the level of knowledge include age, education, employment, socio-economics, information and experience (4).

Based on the percentage of questionnaire answers to statements about the concept of Hypoglycemia, some did not meet the good category standards. As in the results of the answers to statement number 1 "Normal blood sugar levels are 70-110 mg/dl", 67% (20 patients) answered correctly, while the remaining 33% (10 patients) still answered incorrectly. This shows that patients do not fully understand what normal blood sugar levels are, this also influences the patient's understanding of the concept of hypoglycemia (5). And for statement number 6 "Excessive activity and exercise does not affect blood sugar reduction", 63% (19 patients) answered correctly, while the remaining 37% (11 patients) still answered incorrectly. This shows that the patient's understanding of preventing hypoglycemia is still in the sufficient category. Exercise or other vigorous activity has a similar effect to insulin. When you exercise, you will use a lot of blood glucose so that blood glucose levels will decrease (6). Exercise is indeed needed to control blood sugar, but this is done as long as it is not excessive (7). and try to check your blood sugar before and after exercise (8).

For the results of research on the knowledge of Diabetes Mellitus patients at the Internal Medicine Polyclinic, Mardi Waluyo Hospital, Blitar City regarding Initial Treatment of Hypoglycemia, most of them were in the sufficient category, 46.7% (14 patients), in the good category, 36.7% (11 patients), and in the poor category, 16.7% (5 patients). According to Notoatmodjo (2007), health information or education can increase knowledge. Meanwhile, increasing knowledge will influence behavior. According to researchers, this is related to DM patients who have experienced hypoglycemia, namely 73.3% (22 patients) with a total experience percentage of 46.7% (14 patients) experiencing episodes of hypoglycemia more than
3 times during the course of their illness, indicating that the patient's knowledge needs to be improved in terms of management or handling of hypoglycemia as an effort to prevent repeated occurrences of hypoglycemia (8).

Based on the results of a cross tabulation between whether or not they had ever received information about hypoglycemia and knowledge about initial management of hypoglycemia, as many as 30% (9 patients) who had received information about hypoglycemia were in the sufficient category. According to researchers, this is due to a lack of application of the knowledge they have gained through their illness experience. For example, in the concept of treating hypoglycemia, giving glucose needs to be done to raise blood glucose so that it returns to normal, but in reality, it is stated that giving candy or drinking sugar solution can overcome the symptoms of decreasing blood sugar levels (9). It was found that 20% (6 patients) still answered that this statement was wrong.

Conclusion and Recommendations

Based on the research results, it was found that the knowledge of Diabetes Mellitus patients at the Internal Medicine Clinic of Mardi Waluyo Hospital, Blitar City regarding the concept of Hypoglycemia was mostly in the good category, namely 86.7% (26 patients), for sufficient knowledge 10% (3 patients), and knowledge less only 3.3% (1 patient). Most of the results of knowledge about the concept of Hypoglycemia which are included in the good category are certainly influenced by factors that influence knowledge such as age, education, information and the experience that most of the respondents have is good.

Meanwhile, the research results of patient knowledge regarding initial treatment of hypoglycemia were mostly in the sufficient category, namely 46.7% (14 patients), 36.7% (11 patients) in the good category, and 16.7% (5 patients) in the poor category. The results obtained indicate that patient knowledge regarding the management of hypoglycemia still needs to be

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improved to maximize the patient's ability to prevent acute complications of Diabetes Mellitus, namely Hypoglycemia.

Mardi Waluyo Regional Hospital health workers can provide counseling regarding the initial treatment of hypoglycemia. Counseling is carried out in the inpatient room in the patient's discharge plan because it is impossible to hold counseling in the Polyclinic due to the limited number of patients visiting and the number of polyclinic staff. This is done to maximize the patient's ability to prevent acute complications in Diabetes Mellitus patients.

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References

1. Cryer PE. Hypoglycemia in adults with diabetes mellitus. United States: Waltham, MA (Massachusetts),; 2020.
2. Nakhleh A, Shehadeh N. Hypoglycemia in diabetes: An update on pathophysiology, treatment, and prevention. World J Diabetes. 2021;12(12):2036–49.
3. Alpert, J. N., & Alpert JN. Common Symptoms in the Neurology Clinic. Neurol Diagnosis A Pract Bedside Approach. 2019;377–472.
4. Rice OF, To C, Commodities C, Village N. Socio-Economic Impacts Of Land Function Transfer Of Rice Commodities To Corn Commodities In. 2023;05(2):87–102.
5. Heller SR, Peyrot M, Oates SK, Taylor AD. Hypoglycemia in patient with type 2 diabetes treated with insulin: It can happen. BMJ Open Diabetes Res Care. 2020;8(1):1–8.
6. Wu J, Huang J, Zhu G, Wang Q, Lv Q, Huang Y, et al. Elevation of blood glucose level predicts worse outcomes in hospitalized patients with COVID-19: A retrospective cohort study. BMJ Open Diabetes Res Care. 2020;8(1):1–7.
7. Zaharieva DP, Turksoy K, McGaugh SM, Pooni R, Vienneau T, Ly T, et al. Lag Time Remains with Newer Real-Time Continuous Glucose Monitoring Technology during Aerobic Exercise in Adults Living with Type 1 Diabetes. Diabetes Technol Ther. 2019;21(6):313–21.
8. Savikj M, Gabriel BM, Alm PS, Smith J, Caidahl K, Björnholm M, et al. Afternoon exercise is more efficacious than morning exercise at improving blood glucose levels in individuals with type 2 diabetes: a randomised crossover trial. Diabetologia. 2019;62(2):233–7.
9. Gan D, Xu M, Chen L, Cui S, Deng C, Qiao Q, et al. Intake of Sugar Substitute Gummy Candies Benefits the Glycemic Response in Healthy Adults: A Prospective Crossover Clinical Trial. Gels. 2022;8(10).

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